

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

- 1 1. (currently amended): A thin-film magnetic head on a substrate having a
2 slider surface comprising:
3 a first magneto-resistive effect element configured to detect a magnetic signal
4 from a magnetic recording medium; and
5 a second magneto-resistive effect element disposed adjacent to the first magneto-
6 resistive effect element and configured to measure an amount of lapping of the first magneto-
7 resistive effect element along the slider surface,
8 the first magneto-resistive effect element comprising:
9 a first magneto-resistive effect film;
10 an upper shield film disposed above the first magneto-resistive effect film;
11 and
12 a lower shield film disposed below the first magneto-resistive effect film,
13 the second magneto-resistive effect element having a structure that is substantially
14 the same as that of the first magneto-resistive effect element.
- 1 2. (previously presented): The thin-film magnetic head according to claim 1,
2 wherein said first magneto-resistive effect element and said second magneto-resistive effect
3 element each include a magneto-resistive effect film, a first electrode, and a second electrode,
4 and wherein the magneto-resistive effect film is disposed between the first electrode and the
5 second electrode, and wherein the first magneto-resistive effect element and the second magneto-
6 resistive effect element have substantially similar shapes.

3 and 4. (canceled)

1 5. (previously presented): The thin-film magnetic head according to claim 1,
2 wherein said substrate is formed of a non-magnetic material of Al_2O_3 -TiC or SiC.

1 6. (currently amended): A thin-film magnetic head on a substrate having an
2 air bearing surface including:

3 a first magneto-resistive effect element configured to detect a magnetic signal
4 from a magnetic recording medium;

5 a first connection terminal configured to detect the magnetic resistance of said
6 first magneto-resistive effect element;

7 a second magneto-resistive effect element adjacent to said first magneto-resistive
8 effect element and configured to measure an amount of lapping of the first magneto-resistive
9 effect element along the slider surface; and

10 a second connection terminal configured to detect the resistance of said second
11 magneto-resistive effect element,

12 the first magneto-resistive effect element comprising:

13 a first magneto-resistive effect film;

14 an first shield film disposed adjacent a first side of the first magneto-
15 resistive effect film; and

16 a second shield film disposed adjacent a second side of the first magneto-
17 resistive effect film opposite from the first side,

18 the second magneto-resistive effect element having a structure that is the same as
19 that of the first magneto-resistive effect element.

1 7-12. (canceled)

1 13. (currently amended): A thin-film magnetic head comprising:
2 a first magneto-resistive effect element configured to read a magnetic signal
3 recorded on a magnetic disk and having an end portion that is configured to be exposed to an air
4 bearing surface; and
5 a second magneto-resistive effect element adjacent to the first magneto-resistive
6 effect element and configured to measure an amount of lapping of the first magneto-resistive
7 effect element at the air bearing surface,
8 the first magneto-resistive effect element comprising:
9 a first magneto-resistive effect film;
10 an first shield film disposed adjacent a first side of the first magneto-
11 resistive effect film; and
12 a second shield film disposed adjacent a second side of the first magneto-
13 resistive effect film opposite from the first side,
14 the second magneto-resistive effect element having a structure substantially the
15 same as that of the first magneto-resistive effect element..

1 14-16. (canceled)

1 17. (previously presented): The thin-film magnetic head according to claim 1,
2 further comprising an inductive element coupled to the first magneto-resistive effect element and
3 configured to write information on a magnetic recording medium.

1 18. (previously presented): The thin-film magnetic head according to claim 1,
2 wherein an end portion of the first magneto-resistive effect element constitutes a portion of the
3 slider surface.

1 19 and 20. (canceled)

1 21. (previously presented): The thin-film magnetic head according to claim 6,
2 wherein a resistance characteristic of the second magneto-resistive effect element is configured
3 to change as a portion of the second magneto-resistive effect element is removed during lapping.

1 22. (canceled)

1 23. (currently amended): A thin-film magnetic head on a substrate having a
2 slider surface comprising:

3 a first magneto-resistive effect element configured to detect a magnetic signal
4 from a magnetic recording medium, ~~wherein the first magneto-resistive effect element includes~~
5 including a first magneto-resistive effect film, an upper shield film disposed above the first
6 magneto-resistive effect film, and a lower shield film disposed below the first magneto-resistive
7 effect film, wherein the first magneto-resistive effect film, the upper shield film, and the lower
8 shield film are being stacked on said substrate; and

9 a second magneto-resistive effect element dispose adjacent to the first magneto-
10 resistive effect element and configured to measure an amount of lapping of the first magneto-
11 resistive effect element along the slider surface, ~~wherein said the~~ second magneto-resistive effect
12 elements ~~includes having~~ a second magneto-resistive effect film and is substantially the same in
13 structure as the first magneto-resistive effect element,

14 wherein the first magneto-resistive effect film and the second magneto-resistive
15 effect film are formed substantially coplanar.